IN THE CLAIMS

Please amend the claims as follows:

1 – 3. (Canceled)

4. (Currently Amended) An internal pump comprising ~~the inner rotor of claim 1,~~ an inner rotor of an internal gear pump comprising said inner rotor and an outer rotor,

said inner rotor having a plurality of first teeth and said outer rotor having a plurality of second teeth, said plurality of second teeth being greater in number by one than said plurality of first teeth, said first teeth each comprising a tooth bottom defined by two hypocycloidal curves connected to the tooth bottoms of the two first teeth adjacent said each first tooth, respectively, an engaging portion configured to engage said outer rotor and defined by involute curves, and a tooth top defined by a predetermined curve,

and said outer rotor having a plurality of teeth which are in the shape of an envelope of tooth contours of said inner rotor when the center of said inner rotor is rotated about the center of said outer rotor along a circle having a diameter of $(2e + t)$, where e is the distance between the centers of said inner rotor and said outer rotor, and t is a maximum gap defined between said outer rotor and said inner rotor when said inner rotor is pressed against said outer rotor, while said inner rotor is rotated about the center of the inner rotor by $1/n$, where n is the number of teeth of the inner rotor, of one full rotation of said inner rotor every time the center of said inner rotor rotates once about the center of said outer rotor.

5. (Canceled)

6. (Currently Amended) An internal pump comprising ~~the inner rotor of claim 2~~ an inner rotor of an internal gear pump comprising said inner rotor and an outer rotor,

said inner rotor having a plurality of first teeth and said outer rotor having a plurality of second teeth, said plurality of second teeth being greater in number by one than said plurality of first teeth, said first teeth each comprising a tooth bottom defined by two hypocycloidal curves connected to the tooth bottoms of the two first teeth adjacent said each first tooth, respectively, an engaging portion configured to engage said outer rotor and defined by involute curves, and a tooth top defined by a predetermined curve,

and said outer rotor having a plurality of teeth which are in the shape of an envelope of tooth contours of said inner rotor when the center of said inner rotor is rotated about the center of said outer rotor along a circle having a diameter of (2e + t), where e is the distance between the centers of said inner rotor and said outer rotor, and t is a maximum gap defined between said outer rotor and said inner rotor when said inner rotor is pressed against said outer rotor, while said inner rotor is rotated about the center of the inner rotor by 1/n, where n is the number of teeth of the inner rotor, of one full rotation of said inner rotor every time the center of said inner rotor rotates once about the center of said outer rotor,

wherein a base circle of said hypocycloidal curves has a diameter greater than a base circle of said involute curves, each of said hypocycloidal curves of said tooth bottom connecting with one of said involute curves of said engaging portion at a point inside of the base circle of said hypocycloidal curves, and wherein a tangent, at said point, to a circle having a center at the center of the inner rotor and passing said point forms an angle smaller than 85 degrees with respect to a tangent to the involute curve at said point.

7. (Currently Amended) An internal pump comprising ~~the inner rotor of claim 3~~ an inner rotor of an internal gear pump comprising said inner rotor and an outer rotor,

said inner rotor having a plurality of first teeth and said outer rotor having a plurality of second teeth, said plurality of second teeth being greater in number by one than said plurality of first teeth, said first teeth each comprising a tooth bottom defined by two hypocycloidal curves connected to the tooth bottoms of the two first teeth adjacent said each first tooth, respectively, an engaging portion configured to engage said outer rotor and defined by involute curves, and a tooth top defined by a predetermined curve, and

said outer rotor having a plurality of teeth which are in the shape of an envelope of tooth contours of said inner rotor when the center of said inner rotor is rotated about the center of said outer rotor along a circle having a diameter of (2e + t), where e is the distance between the centers of said inner rotor and said outer rotor, and t is a maximum gap defined between said outer rotor and said inner rotor when said inner rotor is pressed against said outer rotor, while said inner rotor is rotated about the center of the inner rotor by 1/n, where n is the number of teeth of the inner rotor, of one full rotation of said inner rotor every time the center of said inner rotor rotates once about the center of said outer rotor,

wherein said predetermined curve defining the tooth top is an epicycloidal curve.

8. (Currently Amended) An internal pump comprising ~~the inner rotor of claim 5~~ an inner rotor of an internal gear pump comprising said inner rotor and an outer rotor,

said inner rotor having a plurality of first teeth and said outer rotor having a plurality of second teeth, said plurality of second teeth being greater in number by one than said plurality of first teeth, said first teeth each comprising a tooth bottom defined by two hypocycloidal curves connected to the tooth bottoms of the two first teeth adjacent said each first tooth, respectively, an engaging portion configured to engage said outer rotor and defined by involute curves, and a tooth top defined by a predetermined curve,

and said outer rotor having a plurality of teeth which are in the shape of an envelope of tooth contours of said inner rotor when the center of said inner rotor is rotated about the center of said outer rotor along a circle having a diameter of (2e + t), where e is the distance between the centers of said inner rotor and said outer rotor, and t is a maximum gap defined between said outer rotor and said inner rotor when said inner rotor is pressed against said outer rotor, while said inner rotor is rotated about the center of the inner rotor by 1/n, where n is the number of teeth of the inner rotor, of one full rotation of said inner rotor every time the center of said inner rotor rotates once about the center of said outer rotor,

wherein a base circle of said hypocycloidal curves has a diameter greater than a base circle of said involute curves, each of said hypocycloidal curves of said tooth bottom connecting with one of said involute curves of said engaging portion at a point inside of the base circle of said hypocycloidal curves, and wherein a tangent, at said point, to a circle having a center at the center of the inner rotor and passing said point forms an angle smaller than 85 degrees with respect to a tangent to the involute curve at said point, and

wherein said predetermined curve defining the tooth top is an epicycloidal curve.